NSR Reform : Overview of Final Rules

MARAMA Workshop
Baltimore, MD
January 14, 2003

NSR Reform Provisions

- **Finalized Changes:**
  - Baseline Actual Emissions
  - Actual-to-Projected-Actual Applicability Test
  - Plantwide Applicability Limitations (PALs)
  - Clean Unit Test
  - Pollution Control Project (PCP) Exclusion
- **Proposed changes:**
  - Routine Maintenance, Repair and Replacement (RMRR)
- **Upcoming Proposals:**
  - Debottlenecking Policy
  - Project Aggregation Policy
  - Allowables PALs

Implementation by States

- For delegated States, new rules become effective March 3, 2003 (60 days from publication in the Federal Register.) EPA Regional Offices will implement the rules until the delegation agreements are revised.
- For SIP-approved States, rule changes due within 3 years from publication in the Federal Register to amend their SIPs or, alternatively, must demonstrate that that State program is at least as stringent as new rules.

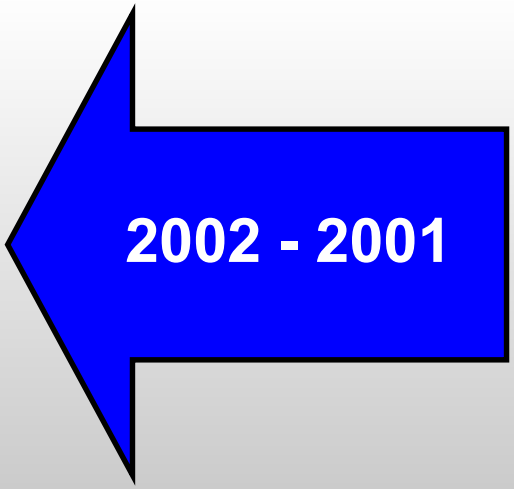
Baseline Actual Emissions

Determining the “past actual” emissions for measuring emissions increases

“Actual Emissions”:

Current Requirements for non-EUSGUs

- Average of the annual emissions for the two year-period immediately preceding the project;
  OR
- Another 2-year period if it is determined to be more representative of operations by the reviewing authority.



"Baseline Actual Emissions":

New Requirements for non-EUSGUs

- Average annual emissions that occurred during any consecutive 24- month period in the past 10 years.
  - ✓Adjust to reflect current emissions control requirements.
  - ✓Reduce for any emissions that exceeded allowable emissions.
  - ✓Available only if adequate data is available for the selected time period.
  - ✓Use same 24-month period for all emissions units involved in project.

Baseline Actual Emissions:

WEPCO Provision for EUSGUs (unchanged)

- Baseline actual emissions are based on any consecutive 24-month period within 5 years immediately preceding the project.
- A different period may be used if the reviewing authority agrees that it is more representative of normal operations.

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Baseline Actual Emissions

EXAMPLE #1

Year	VOC Emissions
1993	75 tpy
1994	**85 tpy**
1995	**95 tpy**
1996	80 tpy
1997	60 tpy
1998	50 tpy
1999	50 tpy
2000	40 tpy
2001	**25 tpy**
2002	**35 tpy**

New Rule: Average annual emissions = 90 tpy

Old Rule: Average annual emissions = 30 tpy

Baseline Actual Emissions

EXAMPLE #2

Year	VOC Emissions
1993	750 tpy
1994	**850 tpy**
1995	**950 tpy**
1996	800 tpy
1997	60 tpy
1998	50 tpy
1999	50 tpy
2000	40 tpy
2001	**25 tpy**
2002	**35 tpy**

New Rule: Average annual emissions = 900 tpy.
Adjusted baseline = 900 x 0.10 = 90 tpy.

Thermal Oxidizer begins operation and controls emissions by 90%

Old Rule: Average annual emissions = 30 tpy

Baseline Actual Emissions

EXAMPLE # 3 (EUSGU)

Year	SO2 Emissions
1998	150 tpy
1999	**165 tpy**
2000	**175 tpy**
2001	150 tpy
2002	145 tpy

WEPCO Rule: Avg. annual emissions = 170 tpy

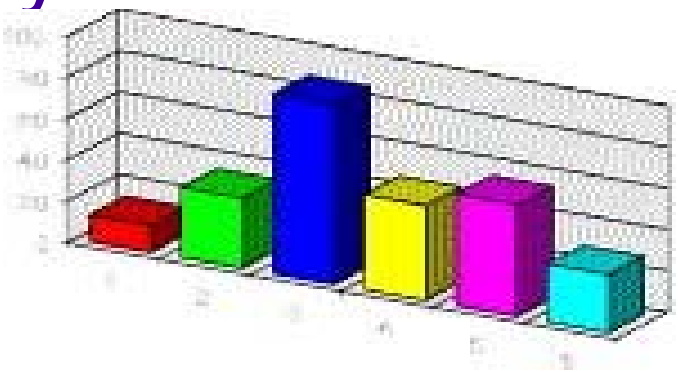
New Rule: Avg. annual emissions = 170 tpy

Using Baseline Actual Emissions

- Baseline Actual Emissions will be used for:
  - Determining emissions increase resulting from project.
  - Computing contemporaneous emissions increase.
  - Establishing a PAL.
- Old “Actual Emissions” definition retained for:
  - Conducting air quality analyses (NAAQS, PSD increments, AQRVs)
  - Computing offsets required.

Actual-to-Projected-Actual Test

Major NSR Applicability Test



Applicability Test:

Old NSR Requirements

- Non-EUSGUS and New Emissions Units :
  "Actual to Potential Test" - Compare Past Actual Emissions to Future Potential Emissions.

- EUSGUs:
  The "WEPCO Test" - Compare actual-to-representative-actual-annual emissions.

Actual-to-Projected Actual Test

New Requirements

- Apply to all changes at existing emissions units.
- Source must make a projection of post-change annual emissions:
  - Project maximum annual emissions for the 5 year-period after the change; or, 10 year-year period after the change (if the change involves an increase in the emissions unit's PTE or capacity).
  - May exclude any emissions increases that the emissions unit could accommodate before the change, and that are unrelated to the change (e.g. demand growth).
  - May use potential emissions in making projection (source's option; could avoid record keeping).

Recordkeeping and Reporting

When there is a reasonable possibility that the project could result in a significant emissions increase:

- **EUSGUs:**
  - **Submit a notification to the reviewing authority before beginning actual construction (*approval not needed to begin construction*.)**
  - **Report annual emissions for five years after the change, or 10 years if the change increases the emissions unit's PTE or capacity.**
- **Non-EUSGUs:**
  - **Maintain a record of the baseline, projection, and annual emissions information for 5 years after the change, or 10 years if the change increases the emission unit's PTE or capacity; and,**
  - **Report to reviewing authority if annual emissions result in a significant emissions increase and are inconsistent with the projection.**
- **Recordkeeping does not apply if projection is based on PTE.**

Past Actual vs. Future Actual

EXAMPLE

Modification at Plant ABC

Assumptions: Existing Major Source, Attainment Area, VOC Emissions

* Plant ABC began operations in late 2000

Year*	VOC Actual Emissions
2001	125 tpy
2002	135 tpy
2003	155 tpy (projected)
2004	155 tpy (projected)
2005	160 tpy (projected)
2006	160 tpy (projected)
2007	165 tpy (projected)

Future Potential Emissions:

300 tpy

Applicability Test (Old)

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2003	155 tpy (projected)
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2005	160 tpy (projected)
2006	160 tpy (projected)
2007	165 tpy (projected)

Future Potential Emissions:

300 tpy

Current Rule

past actual (130 tpy) vs. future PTE (300 tpy)

Proposed Increase = **170 tpy [>40 tpy]**

Net emissions increase = 170 tpy [>40 tpy]

Modification subject to PSD

Applicability Test (New)

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2003	155 tpy (projected)
2004	155 tpy (projected)
2005	160 tpy (projected)
2006	160 tpy (projected)
2007	165 tpy (projected)

Future Potential Emissions:
300 tpy

New Rule

Baseline actual emissions (130 tpy) vs. projected actual (165 tpy)

Proposed Increase = **35 tpy [< 40 tpy]**

MINOR MODIFICATION

Clean Unit Test

Clean Unit Test

- The Clean Unit Test is an alternative approach to major NSR applicability for modifications.
- If a change does not cause an emissions unit to exceed its permitted allowable emissions, major NSR does not apply.
- If the permitted allowable emissions (or a design parameter upon which these are based) will be exceeded, then the source must determine whether the projected post-change emissions will result in a significant emissions increase and a significant net emissions increase.

Clean Unit Test

What Qualifies as a "Clean Unit"?

- Clean Unit Status is automatic for most emissions units that went through major NSR and are complying w/ BACT/LAER.
- Clean Unit Status can be granted through a permitting process if the emissions control is:
  - Comparable to BACT/LAER; or
  - Substantially as effective as BACT/LAER.
- Emissions controls can be add-on controls; pollution prevention; or work practices, but an investment in the control is required to qualify.
- Clean Unit status available for up to 10 years after applying emission controls.

Clean Unit Test EXAMPLE

2004: PSD permit issued to Alpha, Inc.

- New units, A, B, C, subject to BACT and automatically qualify as Clean Units.

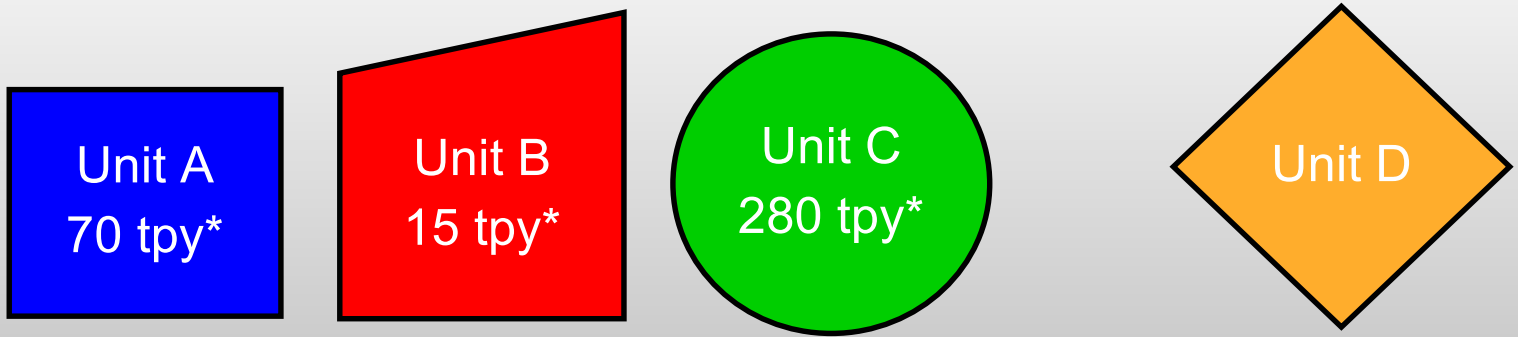
2006: Unit D added

- synthetic minor mod. w/ PTE = 39 tpy

Clean Unit Test

EXAMPLE (cont'd)

- In 2008, Units A, B, C, D are modified:
  - Units A and B will maintain emissions below 70 tpy and 15 tpy, respectably; they are not part of a major modification;
  - Unit C's emissions will increase above 280 tpy; it is subject to the actual-to-projected-actual test to determine whether it is part of a major modification;
  - Unit D is not a Clean Unit; it is subject to the actual-to-projected-actual test to determine whether it is part of a major modification.



*PTE Established in 2004

Plantwide Applicability Limitations (PALs)

Based on Actual Emissions
["Actuals PAL"]

Plantwide Applicability Limitations

- An alternative approach for determining major NSR applicability.
- The final rules address only "actuals PALs". We will be proposing provisions for "allowables PALs" at a later date.
- A PAL is an annual (facility-wide) emission limitation (12-month rolling total, rolled monthly) under which the facility can make any changes without triggering NSR review for that pollutant.
  - Pollutant-specific
  - 10-year term.
- A PAL for VOC or NOx shall not be allowed in an extreme ozone nonattainment area.

Establishing a PAL

- Determine baseline actual emissions for all existing emissions units using the same consecutive 24-month period for all units. (However, you may add the PTE for any emissions unit that was added to the major stationary source after the selected 24-month period);

- Add the pollutant-specific significant emissions rate to the baseline actual emissions for the PAL pollutant;

- Subtract any emissions from emissions units that operated during the 24-month period and have since been permanently shut down; and
- Establish a step-down PAL if there are any requirements that have an effective date during the term of the PAL.

Reopening PAL permits

- Reviewing Authority shall reopen the PAL permit to:
  - Correct typographical or calculation errors made in setting the PAL.
  - Reduce the PAL to create emissions reductions for offset purposes.
  - Revise the PAL to reflect an increase in the PAL.
- Reviewing Authority may reopen the PAL permit to:
  - Reduce the PAL to reflect newly applicable Federal requirements with compliance dates after the PAL effective date.
  - Reduce the PAL consistent with any other requirement that the State may impose under its SIP.
  - Reduce the PAL if it determines that a reduction is necessary to avoid causing or contributing to a NAAQS or PSD increment violation.

Increasing a PAL

- Allowed if the increased emissions can not be accommodated under the PAL, even if all significant and major emissions units were to meet a BACT level of control.
- Emissions units causing the need for an increase (modified or new units) must go through major NSR.
- New PAL based on sum of:
  - Baseline actual emissions of small emissions units;
  - Baseline actual emissions of significant and major emissions units assuming a BACT level of control; and,
  - Allowable emissions of new or modified emissions units.

PAL Renewal

- If baseline actual emissions plus significant level are = 80% of current PAL, then PAL may be renewed at current level.
- If baseline actual emissions plus significant level are < 80% then:
  - PAL may be established at a level that is more representative of baseline actual emissions, or a level that is appropriate based on air quality needs or other considerations.
- The new PAL level can not be higher than the existing PAL (unless PAL increase provisions are met) or the PTE of the source.

PAL Expiration

- Within the timeframe specified for PAL renewals, the source shall submit a proposed allocation of the PAL to each emissions unit.
- The PA shall decide whether and how the PAL will be distributed and issue a revised permit incorporating allowable limits for each emissions unit.
- Any subsequent physical or operational change at the source will be subject to major NSR review.

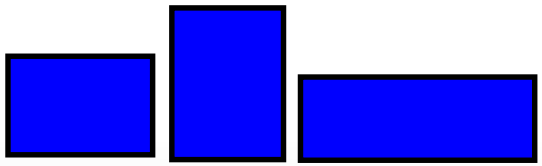
PAL Monitoring Requirements

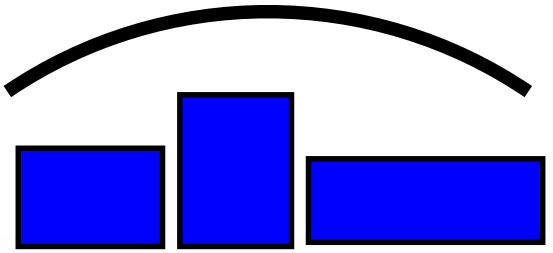
- PAL permit must contain enforceable requirements to determine plantwide emissions (12-month rolling total, rolled monthly).
- A source may use any of the following approaches:
  - Mass balance calculations for activities using solvents or coatings.
  - Continuous Emissions Monitoring Systems (CEMS).
  - Continuous Parameter Monitoring Systems (CPMS) or Predictive Emissions Monitoring Systems (PEMS).
  - Emissions Factors.
- If no monitoring data exists for an emissions unit for a time period, the source owner must report the maximum potential emissions without considering enforceable or operating emissions limitations.

PAL EXAMPLE

Existing Source:
Actual Emissions= 150 tpy VOC
Potential Emissions = 400 tpy VOC

Plantwide Limit =
150+40* = **190 tpy VOC**





Source can make any changes for 10 years without triggering major NSR if plantwide emissions remain below 190 tpy VOC..

** 40 tpy is significant emissions rate for VOC*

Pollution Control Project Exemption

Pollution Control Project Exclusion

- The PCP exclusion allows a project that reduces emissions of one or more air pollutants regulated under the Act to avoid major NSR review despite causing a significant emissions increase in a collateral pollutant.
- Our previous rules provided a PCP exclusion to only EUSGUs. We extended the exclusion to other industries in a policy memo issued in 1994. The Final rules replace the existing WEPCO PCP provisions and codify new requirements for all industries.
- The exclusion only applies to activities at existing emissions unit; addition of new emissions units does not qualify for the exclusion.

Pollution Control Projects
What qualifies for the Exclusion?

- To qualify for the exclusion, an activity must pass two tests:
  - Environmentally Beneficial Test (shows benefits outweigh emissions increase).
  - "Cause-or-Contribute" Test (shows that project will no cause or contribute to a NAAQS or PSD increment violation, or adversely impact a Class I AQRV).
- Listed Projects -- No permit action is required, but a notice must be sent to the Reviewing Authority with information on the project and air quality analysis.
- Unlisted Projects – A permitting action, with public notice and comment, is required to show that both tests are satisfied.

State Pre-emption Issues

- The new rules establish the minimum requirements for PSD/NSR programs. Any approved State or local agency must certify that their program is at least as stringent as the EPA program.
- EPA HQ and Regional Offices will determine procedures for certifying programs.

EPA Contacts

• General questions	Lynn Hutchinson 919-541-5795
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• Pollution Control Projects	Dave Svendsgaard 919-541-2380